



CLEAN OUT AND REPLUG\_

ESTIMATED DEPTH.

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| 2) | Operator' | s   | VEM | #270 |        |    |  |

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Well No. \_\_\_ <u>KEM #379</u> 107 

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| 7) Estimated 8) Approxim 9) Approxim CASING ANI CASING OR FUBING TYPE Inductor Inchested Included The req ROYALTY PI s the right to e imilar provision or answer above Required Copi Copies of this amed coal op fines at Charl otary:   | L TARGET depth of contate water strate coal sea D TUBING  Size  10 3/4  7" 4 1/2"  N RIGHTS wide one of dist he least uirement of ROVISIONS extract, product on for comparketed? E is No, notices (See reverse Permit Apprenator, coal eston, West   | other physic of the following of the following of the following of the physic of the p | ring: or other l-1-(c) (1) rket the oito the ow lonal is ne  | continuit through il or gas mer of t   | Used   | FOOTAGE For drilling  250  1774  4125  tract or contracts by See reverse side for pon a lease or other or gas in place which swer is Yes, you may reclamation plan has fore the day of the residue.   | w formation   | right to extract oil or related to the volume orm IV-60.   | PACKERS  Kinds  SS A to SU  Oize pozmix  SS A  Dethined zmix  Perforations:  Top  gas.  g for flat well roys  of oil or gas so                                       | Bottom  alty or any extracted                        |
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| 7) Estimated 8) Approxim 9) Approxim 19) Approxim CASING ANI CASING OR TUBING TYPE 10 10 10 10 10 10 11 10 11 11 11 11 11  | L TARGET depth of contate water strate coal sea D TUBING  Size  10 3/4  7" 4 1/2"  N RIGHTS wide one of dist he least uirement of ROVISIONS extract, product on for comparketed? E is No, notices (See reverse Permit Apprenator, coal eston, West   | other physic of the following of the following of the following of the physic of the p | ring: or other l-1-(c) (1) rket the oito the ow lonal is ne  | continuit through il or gas mer of t   | Used  I he oil contains at and in or being | FOOTAGE For drilling  250  1774  4125  tract or contracts by See reverse side for pon a lease or other or gas in place which swer is Yes, you make reclamation plan has fore the day of the residue.  | w formation  It,  Deing mined in the  INTERVALS  Left in well  250  1774  4125  which I hold the specifics.)  continuing contrate is not inherently by use Affidavit For we been mailed by mailing or delivery.  Its: Ger | right to extract oil or related to the volume orm IV-60.   | PACKERS  Kinds  SS A to SU  Oize pozmix  SS A  Dethined zmix  Perforations:  Top  gas.  g for flat well roys  of oil or gas so                                       | Bottom  Bottom  alty or any extracted,               |
| 7) Estimated 8) Approxim 9) Approxim CASING ANI CASING OR TUBING TYPE Inductor esh water sal termediate oduction bing ners  EXTRACTION Check and pro Included The req ROYALTY PR Is the right to e similar provision or answer above Required Copi Copies of this lamed coal op Aines at Charl otary:  | L TARGET depth of conate water strate coal sea D TUBING  Size  10 3/4  7" 4 1/2"  N RIGHTS wide one of dist he leasuirement of ROVISIONS extract, prodoon for comparketed? E is No, not es (See reve Permit Apperator, coal eston, West  | the follower or leases Code 22-4 Stuce or mar pensation to Yes In Normal additions additions additions where side.)  | ring: or other distribution on al is need the encand coal  | continuit through il or gas mer of t   | Used  Used  Used  Used  Used  O  O   | FOOTAGE For drilling  250  1774 4125  tract or contracts by See reverse side for pon a lease or other or gas in place which swer is Yes, you make the day of the residue of the state of the day of the residue of the state of the state of the same | w formation  It, peing mined in the  INTERVALS Left in well  250  1774 4125  which I hold the specifics.)  continuing contraint is not inherently use Affidavit F we been mailed by mailing or delivery  Signed: Its: Ger | right to extract oil or related to the volume orm IV-60.   | PACKERS  Kinds  SS A to SU  Oize pozmix  SS A  Dethined zmix  Perforations:  Top  gas.  g for flat well roys  of oil or gas so                                       | Bottom  alty or any extracted, the above artment of  |
| 7) Estimated 8) Approxim 9) Approxim 9) Approxim CASING ANI CASING OR FUBING TYPE Inductor esh water al termediate oduction bing mers  EXTRACTION Check and pro Included The req ROYALTY PR Is the right to e cimilar provision coroduced or me answer above Required Copi Copies of this lamed coal op- dines at Charl otary: y Commission  | L TARGET depth of conate water strate coal sea D TUBING  Size  10 3/4  7" 4 1/2"  N RIGHTS wide one of dist he leasuirement of ROVISIONS extract, prodoon for comparketed? E is No, not es (See reve Permit Apperator, coal eston, West  | other physic of the following of the fol | ring: or other distribution on al is need the encand coal  | continuit through il or gas mer of t   | Used  Used  Used  Used  Used  O  O   | FOOTAGE For drilling  250  1774  4125  tract or contracts by See reverse side for pon a lease or other or gas in place which swer is Yes, you make reclamation plan has fore the day of the residue.  | w formation  It, peing mined in the  INTERVALS Left in well  250  1774 4125  which I hold the specifics.)  continuing contraint is not inherently use Affidavit F we been mailed by mailing or delivery  Signed: Its: Ger | right to extract oil or related to the volume orm IV-60.   | PACKERS  Kinds  SS A to SU  Oize pozmix  SS A  Dethined zmix  Perforations:  Top  gas.  g for flat well roys  of oil or gas so                                       | Bottom  Bottom  alty or any extracted,               |
| 7) Estimated 8) Approxim 9) Approxim CASING ANI CASING OR FUBING TYPE Inductor Included Included The req ROYALTY PI s the right to e imilar provision answer above Required Copi Copies of this amed coal op fines at Charl otary:   | L TARGET depth of conate water strate coal sea D TUBING  Size  10 3/4  7" 4 1/2"  N RIGHTS wide one of dist he leasuirement of ROVISIONS extract, prodoon for comparketed? E is No, not es (See reve Permit Apperator, coal eston, West  | the follower or leases Code 22-4 Stuce or mar pensation to Yes In Normal additions additions additions where side.)  | ring: or other distribution on al is need the encand coal  | continuit through il or gas mer of t   | Used  Used  Used  Used  Used  O  O   | FOOTAGE For drilling  250  1774 4125  tract or contracts by See reverse side for pon a lease or other or gas in place which swer is Yes, you make the day of the residue of the state of the day of the residue of the state of the state of the same | w formation  It, peing mined in the  INTERVALS Left in well  250  1774 4125  which I hold the specifics.)  continuing contraint is not inherently use Affidavit F we been mailed by mailing or delivery  Signed: Its: Ger | right to extract oil or ct or contracts providing related to the volume orm IV-60.                     | PACKERS  Kinds  SS A to SU  Sizes PO ZMIX  SS A  SPENIFIES ZMIX  Perforations:  Top  gas.  g for flat well roys of oil or gas so  vered by hand to ation to the Depa | Bottom  alty or any extracted, the above interest of |

| tefer to No. 10) Prio<br>roper district oil and | r to the construct<br>d gas inspector 2 | ion of roads, loc<br>4 hours before a | ations and pit<br>ctual permitte | s for any permitted work has com | ed work. In addition, the well operator or his contractor shall notify the imenced.) |
|---|---|---------------------------------------|----------------------------------|----------------------------------|--|
| ermit expires                                   | January 1                               | 0, 1984                               |                                  | unless dr                        | illing is commenced prior to that date and prosecuted with due diligence.            |
| Bond:   | Agent:                                  | Plat:                                 | Casing,                          | Fee                              | Trest Durch (10)   |
| 10/0  | 111                                     |                                       |                                  | 963020                           | Administrator, Office of Oil and Gas   |

| ) | Date: | March | 15 | <b></b> 5 | 19 | 84 |
|---|-------|-------|----|-----------|----|----|
|---|-------|-------|----|-----------|----|----|

2) Operator's KEM #379

3) API Well No. 47 - 107 - 1260-REN
State County Permit

## STATE OF WEST VIRGINIA DEPARTMENT OF MINES, OIL AND GAS DIVISION

RENEW

|       |                                       |  |              |                | APPI          | JCATI     | ON FOR A                     | WELL V    | VORK PERMI      | T                                       |                   |                      |  |
|-------|---------------------------------------|--|--------------|----------------|---------------|-----------|------------------------------|-----------|-----------------|---|-------------------|----------------------|--|
| 4)    | WELL TY                               | PE: A C  | Dil          | / G            | as X          | /         |                              |           |                 |   |                   |                      |  |
| .,    |                                       |  |              |                |               |           | / Undergro                   | und store | 3 C P           | / Dec                                   | ъ X               | / Shallow            |  |
| 5)    | LOCATIO                               |  | evation: _   |                | **            |           |                              |           | hio River       |   | p                 | / Snanow             | /)                                     |
| ,     |                                       |  | _            |                |               |           |                              |           |                 |   | drangle:          | Lubeck               |  |
| 6)    | WELL OP                               | ERATOR   | Kaise        | r Expl         | oration       | n and     | Mining                       | Co 7)     | DESIGNATE       | D AGENT                                 | R A               | Pryce                |  |
| ŕ     | Address                               |  | P. O.        | Box 8          |               |           |                              | 001)      | Address         |   | Same              |                      |  |
|       | •                                     |  | Raven        | swood.         | WV 26         | 5164      |                              |           |                 | *************************************** | - <del> </del>    |                      |  |
| 8)    | OIL & GA                              | S INSPEC   | TOR TO       | BE NOTI        | FIED          |           |                              | 9)        | DRILLING C      | ONTRACT                                 | OR:               |                      |  |
|       | NameJ6                                | erry T   | ephabo       | ck             | 1             |           |                              | ,         | Name <u>Cli</u> |   |                   |                      |  |
|       | Address                               | Rt   | <u>.1, B</u> | ox 101         | Α             |           | ····                         |           | Address         |   | Box 3             | 388                  |  |
|       |                                       | Ri   | pley,        | WV 2           | 5271          |           |                              |           |                 | Elkvi                                   |                   |                      |  |
| 10)   | PROPOSE                               | D WELL   | WORK:        | Drill          | X             | Drill     | deeper                       | ,         | Redrill         |   |                   | COPPET.              | PIPE IN                                |
|       |                                       |  |              |                |               |           |                              |           | new formation   |   | TOTA              | V LECT               | 7 17 1111                              |
|       |                                       |  |              |                |               |           |                              |           |                 |   | ASC               |                      |  |
| 11)   | GEOLOGI                               | CAL TAR  | GET FOR      |                |               |           |                              |           |                 |   |                   | MAR 2 9              |  |
|       | 12) Estima                            |  |              |                |               |           | -                            | feet      |                 |   |                   | 141/41< <del>=</del> |  |
|       |                                       |  |              |                |               |           | feet;                        | salt,     |                 | feet.                                   | OII               | . & GAS DI           | VISION                                 |
|       |                                       |  |              |                |               |           |                              |           | ing mined in th |   | S                 | OF NO                |  |
|       | CASING A                              |  |              |                |               |           |                              |           |                 |   | DEF               | I. OF T              | VIII VIII VIII VIII VIII VIII VIII VII |
|       | SING OR                               | and control of the co | SPEC         | FICATIONS      | S             | 1         | FOOTA                        | GE INTE   | RVALS           | CEMEN                                   | r fill-up         | PAC                  | KERS                                   |
| 10    | BING TYPE                             | Size   | Grade        | Weight per ft. | New Us        | ed        | For drilling                 | 1         | Left in well    |   | ACKS<br>ic feet)  |                      |  |
| Cond  | luctor                                |  |              |                |               |           |                              |           |                 |   |                   | Kinds                |  |
| Fresh | water                                 | 10 3/4   | 4 11         |                | Х             |           | 250                          |           | 250             | 150 sk                                  | s clas            | A to su              | ırface                                 |
| Coal  | · V · I                               |  |              |                |               |           |                              |           |                 | 1                                       |                   | Sizes                | 41.10.00                               |
| Inter | mediate                               | 7"   |              |                | Х             |           | 1774                         |           | 1774            | 55 sks                                  | 50/50             | pozmix               |  |
| Prod  | uction                                | 4 1/2  | 11           |                | X             |           | 4125                         |           | 4125            |   |                   | o posznix            |  |
| Tubir | ng                                    |  |              |                | , i           |           | 12.0                         |           | 1250            | 1500 34                                 | <del>3 JU/J</del> | POZIIIX              |  |
| Liner | 'S                                    |  |              |                |               |           |                              |           |                 |   |                   | Perforations:        |  |
|       |                                       |  |              |                |               |           |                              |           |                 |   |                   | Тор                  | Bottom                                 |
|       |                                       |  |              |                |               |           | HY                           |           |                 | ji                                      |                   |                      |  |
|       |                                       | <u> </u>   | <u> </u>     |                |               |           |                              |           |                 |   |                   |                      |  |
|       |                                       |  |              |                |               |           |                              |           |                 |   |                   |                      |  |
|       |                                       |  |              |                |               |           |                              |           |                 |   |                   |                      |  |
|       |                                       |  |              |                |               |           | FFICE US                     |           |                 | * ···                                   |                   |                      |  |
|       |                                       |  |              |                |               | DI        | RILLING                      | PERM      | IT              |   |                   |                      |  |
| Perm  | nit number_                           | 47-  | 107-12       | 60-REN         | Ī             |           |                              | ,         |                 | Me                                      | y 2,              |                      | 19 84                                  |
|       |                                       |  |              |                |               |           |                              |           |                 | 440                                     | Dai               | e                    | 17 04                                  |
| Γhis  | permit cover                          | ring the w   | ell operato  | or and well    | l location si | hown be   | low is evider                | nce of pe | ermission grant | ed to drill in                          | accordar          | ice with the ne      | rtinent legal re-                      |
| quire | ements subject                        | ct to the co   | onditions of | contained      | herein and o  | on the re | everse hereof                | · Notific | ation must be a | ziven to the                            | District Oi       | and Gas Insne        | ector (Refer to                        |
| NO.   | 8) Prior to ti                        | ne constru   | ction of ro  | ads. locati    | ons and pit   | s for an  | y permitted v<br>k has comme | vork. In  | addition, the w | ell operator                            | or his con        | tractor shall no     | otify the proper                       |
|       |                                       |  |              |                |               |           |                              |           |                 |   |                   | 1                    |  |
| ever  | permitted wo<br>se hereof.            | ork is as de   | escribed in  | the Notic      | e and Appli   | cation,   | plat, and rec                | lamation  | plan, subject   | to any modi                             | fications a       | nd conditions s      | specified on the                       |
|       | nit expires                           | May  | 2, 19        | 86             |               |           | unless                       | well wor  | k is commenced  | i prior to the                          | t date and        | proceedings          | h due diligence.                       |
|       |                                       |  |              |                |               |           | amess                        | WCII WOI  | k 19 commence   | i pi ioi to tila                        | i date and        | prosecuted wit.      | n due diligence.                       |
| D-    |                                       | A  |              | T              | ~ ·           | T _       |                              |           |                 |   |                   |                      |  |
| B     | TEXXET!                               | Agen   | · 1          | Plat-          | Casing        | Fe        | ee                           |           | •               |   |                   |                      |  |
|       | 100                                   |  | \( \nabla \) | $m_{\mu}$      | MI            | 66        | 8                            |           |                 | 7/1                                     |                   |                      |  |
| ·     | · · · · · · · · · · · · · · · · · · · | ······································   |              |                | <del> </del>  | <u> </u>  |                              |           | 1               |   | <i>i</i>          |                      |  |
|       |                                       |  |              |                |               |           | -                            |           | Adm             | inistrator, C                           | Office of C       | il and Gas           |  |
| JOT   | E: Keen or                            | ie conv of   | thic norm    | it posted a    | t the drillin | نمومون    | ~=                           |           | 7 1411          |   |                   | and Jas              |  |



IV-35 (Rev 8-81)

# State of West Wirginia

Pepartment of Mines Gil und Gas Division

| Date     | 7-17-84 |      |       |
|----------|---------|------|-------|
| Operator | 's      | 1,4. |       |
| Well No. | KEM     |      |       |
| Farm C   | ara Hof |      |       |
| API No   |         |      | 0 KE1 |

## WELL OPERATOR'S REPORT

### DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

| WELL TYPE: Oil / Gas<br>(If "Gas," Pr | X / Liquid Injection x / Undergr | ion/Wast           | e Disposal<br>e / Deep | L_/<br>D_/ Sha            | ullow /)               |
|---------------------------------------|----------------------------------|--------------------|------------------------|---------------------------|------------------------|
| LOCATION: Elevation: 59               |                                  |                    |                        |                           | discussion common      |
| District: HA                          | ARRIS County                     | WOOD               | Quadrangle             | LUBEC                     | ζ                      |
| attendacense Employation              | •                                |                    |                        |                           |                        |
|                                       |                                  |                    |                        |                           |                        |
| COMPANY KAISER EXPLORATION            |                                  |                    |                        |                           | Cement                 |
| ADDRESS P.O. Box 8, RAVE              |                                  | Casing             | Used in                |                           | fill up                |
| DESIGNATED AGENT R.A. PI              | KY CE                            | Tubing             | Drilling               | in Mell                   | Cu. ft.                |
| ADDRESS SAME                          |                                  | <b>Size</b><br>16" | (KB)                   |                           |                        |
| SURFACE OWNER WILBERT I               | 200020019100-0-00                | Cond.              | 65                     | 65                        | 200 sks                |
| MINERAL RIGHTS OWNER ST               |                                  | 103/4"             | 262                    | 262                       | Class A                |
| ADDRESS SAME                          |                                  | 9 5/8              |                        |                           |                        |
| OIL AND GAS INSPECTOR FO              | R THIS WORK GLENN                | 8 5/8              | 0571                   | 0577                      | 150 sks 50             |
| ROBINSON ADDRESS                      |                                  | 7                  | 2571                   | 2571                      | pozmix 100<br>Class A  |
| PERMIT ISSUED                         |                                  | 5 1/2              | 4007                   | 4007                      | 220 sks 50             |
| DRILLING COMMENCED 6                  | -18-84                           | 4 1/2              | 4097                   | 4097                      | Pozmix                 |
| DRILLING COMPLETED 6                  |                                  | 3                  |                        |                           |                        |
| IF APPLICABLE: PLUGGING               |                                  | 2                  |                        |                           |                        |
| CONTINUOUS PROGRESSION F              | ROM DRILLING OR                  | Liners             |                        |                           |                        |
| REWORKING. VERBAL PERMI               | 22TON OBTATIVED                  | used               |                        |                           |                        |
| GEOLOGICAL TARGET FORMAT              | TON ORIGKANY                     | -                  | Dep                    | <b>th</b> 400             | 3 feet                 |
|                                       | well 4110 feet                   |                    |                        |                           |                        |
|                                       | Fresh N/A feet                   |                    |                        |                           |                        |
| Coal seam depths:                     | NONE RECOGNIZED                  | Is coal            | being min              | ed in the                 | e area? NO             |
| OPEN FLOW DATA .                      |                                  |                    |                        | •                         | •                      |
|                                       | ORISKANY                         | Pa                 | v zane dep             | th 40                     | os feet                |
|                                       | flow 0 Mcf/6                     |                    |                        |                           |                        |
|                                       | 300 Mcf/6                        |                    |                        |                           |                        |
| _                                     | open flow between in             |                    |                        |                           |                        |
|                                       | re 1530 psig(sur                 |                    |                        |                           |                        |
|                                       | to multiple complet              |                    |                        | Cata 2002 — Carabanada da |                        |
|                                       | ormation                         |                    | y zone dep             | oth                       | feet                   |
| Gas: Initial open                     | flow Mcf/e                       | d Oil: Ir          | itial oper             | flow                      | Bbl/d                  |
|                                       | lowMcf/                          |                    |                        |                           | " taba                 |
| Time of                               | open flow between is             | nitial and f       | inal tests             | h h                       | ours                   |
| Static rock pressu                    | repsig(surf                      | ace measuren       | ment) after            | ho                        | We shut <sup>984</sup> |
| •                                     |                                  |                    |                        |                           |                        |

#### DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

6/27/84 YOUNG'S WIRELINE TO PERF ORISKANY SANDSTONE - 20(.39" DIA.) HOLES - 4003/4008.

BJ HUGHES TO FOAM FRAC ORISKANY: BREAKDOWN PRESS - 3320 psig, BRKDOWN FLUID - FOAM, TREATING PRESS - 2070 psig, TREATING FLUID - FOAM, TOTAL SAND - 30,000 # of 20/40, TOTAL N<sub>2</sub> - 392,000 scf, TOTAL FLUID - 202 bbl, ISIP - 1610, 5 min SIP - 1550 psig.

WELL LOG

|                              | e diamentale di                             |             | reconstante i ancio se colorina.   |
|------------------------------|---|-------------|--|
| FORMATION COLOR HARD OR SOFT | TOP FEET                                    | BOTTOM FEET | REMARKS Including indication of all free and salt water, coal, oil and ga  |
|                              |   |             |  |
| SOIL and SHALE               | 0   | 85          |  |
| SHALE                        | 85  | 143         |  |
| SAND                         | 143 .                                       | 177         |  |
| SHALE                        | 177   | 295         |  |
| SAND                         | 295   | 392         |  |
| SHALE and SAND               | 392   | . 686       |  |
| SHALE and SILTSTONE          | 686   | 1100        |  |
| DUNKARD SAND                 | 1100  | 1192        | ·  |
| SHALE                        | 1192  | 1290        | •  |
| SALT SANDS                   | 1290  | 1440        |  |
| SHALE                        | 1440  | 1782        |  |
| COFFEE SHALE                 | 1782  | 1802        |  |
| BEREA SAND                   | 1802  | 1804        |  |
| SHALE                        | 1804  | 2934        | S/G @ 2835   |
| BROWN SHALE                  | 2934  | 3402        | S/G @ 3386   |
| SHALE                        | 3402  | 3634        |  |
| MARCELLUS SHALE              | 3634  | 3911        | S/G @ 3760   |
| ONONDAGA LIME                | . 3911                                      | 3994        |  |
| ORISKANY SAND                | 3994  | 4027        | S/G @ 4000   |
| HELDERBERG LIME              | 4027  | 4110        |  |
| TOTAL DEPTH                  | 4110  |             |  |
| \$<br>\$                     | The statement and consequence (consequence) |             |  |
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(Attach separate sheets as necessary)

| Sale - Sales |
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Note: Regulation 2.02(i) provides as follows:

"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including